sources, it follows that the animal functions must be carried on with a greater or less degree of activity and power, according to the temperature of the surrounding atmosphere. Hence we find that, in common with all other reptiles, they are not only enabled to sustain long fasts, but in fact digest their food only in proportion to the heat of the climate. In cool weather they take food but seldom, digest it slowly, and will even live for many months, and even for years, without any nourishment. Their respiration, circulation, muscular motion, and every other function, are diminished in a corresponding degree. When the temperature sinks to a certain point, the functions of life gradually cease to act; the animals refuse to feed, the respiration becomes slower and slower, the circulation more and more languid, and a state of torpidity, almost resembling death itself, takes place, in which condition they remain during the winter, and until the return of spring, by its increasing temperature, renews their action, and restores them to their natural state of life and activity.

The Testudinata are obviously composed of three distinct principal groups, of which the conformation bears a striking and satisfactory relation to their habits and mode of life. These are the terrestrial, the fresh-water, and the marine forms; and the characters by which they are distinguished are so constant and so influential on their situation, food, and other circumstances of their history, as to justify a separate consideration. I shall however first give such a general description of their structure, as may be necessary to illustrate their history and their zoological characters, though without entering at present into any detailed account of their anatomy.

The peculiar structure of the heart, upon which the imperfect condition of the circulation depends, consists in the ready communication of the two chambers of the ventricle. The blood, as in the higher animals, enters the heart by two auricles, of which the right receives the blood which has been circulated through the body, and the left that which has been aërated in the lungs. But in the ventricle the two kinds of blood become more or less mixed, so that neither is that portion which is sent to the general system, absolutely decarbonized, nor is that which goes to the lungs, to receive the necessary change, in such a state of impurity as when it arrived at the heart after having gone through the general circulation.

The structure of the lungs and the condition of the respiratory function are strictly analogous to this imperfect state of the circulation. Instead of being formed, as in the warm-blooded animals, of a close congeries of innumerable minute cells, far more compact than the most solid sponge, the cells are here large and comparatively few, and occupy, in some parts, the parietes only of the spacious sacs of which these organs consist. The quantity of blood exposed to the influence of the air at any one time, must therefore be very small, and the decarbonization in a corresponding degree imperfect. In exact correspondence with these facts, the mode of respiration is also extremely circumscribed. Deprived, by the osseous agglutination of the ribs and sternum, of all motion of the chest, and being also unprovided with a diaphragm, the inhalation of air is obviously impossible: inspiration is therefore performed by a simple act of deglutition. By the expansion of the pharynx, air is received into that cavity through the nostrils, the posterior openings of which are then closed by the application of the tongue, whilst the opening of the pharynx into the œsophagus is also shut, by the circular contraction of that part. The air tube is consequently the only passage left open, and by the contraction of the pharynx, the air is forced through it into the lungs. Expiration is effected by means of certain muscles, hereafter to be described, which are situated at the back part of the body, and which, by their contraction, force the viscera of the abdomen forwards, and thus pressing upon the lungs, occasion the partial expulsion of the air. Thus the structure of the lungs, the circumscribed mode of inspiration, and the partial evacuation of the lungs in expiration, all combine to render the respiratory function imperfect; whilst the mixture of the two kinds of blood in the heart, also renders the more frequent or complete act of respiration unnecessary, as there always remains some aërated blood to mix with that which is impure.

But the character by which these animals are at once distinguished from all other Vertebrata, is the solid bony box, within which all the viscera are inclosed, and which, in most genera, covers also the head, tail and limbs, when the animal is at rest. The upper portion of this osseous case, called the carapace or buckler, is formed of the dorsal vertebræ and ribs, which are immoveably connected by sutures, not unlike those of the cranial bones in most Mammifera,

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